

The purpose of this modification is to provide answers to questions which have been posed by potential offerors. The following answers are provided:

1. Why does NRL need a modulated Differential Scanning Calorimeter (DSC)?

NRL needs to be able to distinguish and analyze temporally overlapping thermal events in developmental marine coatings using the best available commercial technology. The modulated DSC functionality enables NRL to characterize the thermal behavior of experimental and developmental coatings systems, for those situations where reversible thermal events (e.g., glass transitions) are obscured by other (irreversible) thermal events such as evaporation of volatiles or residual crosslinking (curing) chemistry. This same technology is also expected to provide greater analytical sensitivity over otherwise comparable nonmodulated DSC units, and under some circumstances to facilitate faster analyses than previously achievable, without compromising data quality.

2. What is NRL's intended application?

This equipment will be used to develop marine coatings for use by U.S. Navy. Systems under development include, but are not limited to, polyurethanes, epoxies, polyureas, polysulfides, and thermally sprayed hard coatings intended to replace electrodeposited hard chrome. Specialty application coatings are also under evaluation (e.g., anti-condensation) and in development (e.g., polymer-inorganic nanocomposite systems). This laboratory also assists other Navy activities in the qualification testing of candidate coatings submitted by vendors for approval for use on USN vessels, and occasionally participates in the analysis of coating materials that have failed in the field. NRL also anticipates occasional use in non-coatings research programs (e.g., development of materials for electrochemical applications).

3. Does NRL's application require modulated DSC?

Yes. See Question 1 above.

4. Does NRL have non-reversing overlapping transitions?

In a number of our efforts, NRL appears to encounter temporally overlapping reversible and nonreversing thermal transitions. The availability of a modulating DSC will assist us immensely in distinguishing these individual processes. This enables further materials development, elucidation of critical property-performance relationships, and/or determination of probable material failure mechanisms.

All other terms and conditions, including the time and date for the receipt of proposals, remain unchanged.